M.R.O. 1—77,006—8-6-37.

(1) Number of pages 30

(2) Date of repair 6 . 12 . 43

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 2650-51 Press ~~Mis.~~

256-58

Dated 12 8 1869.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department,
12th August 1869.

Jo. 256. Read the following letter from the Consulting Engineer for Irrigation and Canal Company, to the Secretary to Government, Public Works Department, dated Madras, 17th July 1869, No. 47 :—

I HAVE the honour, with reference to the order of Government, No. 2,121, of he 30th ultimo, to forward a copy of my Administration Report for the past year, which contains the fullest available information regarding the Madras Irrigation nd Canal Company's works.

I have not received any accounts of expenditure to a later date than the 31st Iarch last. The introduction of the new system of audit appears to have occa-ioned some delay, and the Examiner informs me that the accounts for April are iot yet journalized, but that the Company's officers have promised to take up the ccounts for April and May immediately.

2. The main canal works, since the 31st March, have been making good progress, but the distribution works, without which any considerable extension of cultivation is impracticable, are still very much behind hand. Estimates for distribution to the first sub-division of the 4th section, main canal*, were sanctioned n September 1868, and these works, which are intended to water 14,807 acres, are n progress. Distribution estimates, amounting to Rupees 11,150, for the supply of 9,837 acres under the 3rd section, have just been submitted for sanction. Distribution channels under the first seventy-two miles of the canal ought, by this time, o have been in a very advanced state, even if not fully developed; but instead of his there has been as yet hardly a commencement made, and, as the ryots will ertainly not apply for water until they feel assured of getting it, and of the stabiity of the supply, I do not anticipate that there will be more than a nominal ncrease of wet cultivation during 1869-70.

Rupees 28,929.

* Miles 44 to 60—G. O. No. 2,882.

Iiles 32 to 43—letter, No 41, dated 10th instant.

3. Under the arrangements sanctioned by the Government on the recomnendation of the Revenue Board, the extension of irrigation will, when the minor hannels shall have been carried out, depend almost entirely upon the exertions of he Revenue officers of the Government; and I think that, unless the Government re prepared to depute a special officer to superintend the development of irrigation, he exclusion of the canal officers from the duty of ascertaining the wants and vishes of the ryots and providing for them will result in a very considerable postonement of the revenue returns, which the Government and the Company both lesire to obtain, and which the present forward state of the main canal should nable to be realised very shortly. Even a special Revenue officer, unless assoiated with the canal officers, and working heartily with them, will be able only to nake the ryots willing to take water by removing prejudices which may interfere vith the introduction of such a radical change as the conversion of dry lands into vet. The regulation of the supply must be in the hands of the canal officers, and do not see how, without free communication between them and the ryots who are o get the supply, any system can work satisfactorily.

No. 25.

ADMINISTRATION REPORT.

MADRAS IRRIGATION AND CANAL COMPANY.

THE progress made during the year was much greater than that in 1867-68. t has not, however, been as considerable as might have been expected. The umber of labourers employed has been very much below that of the year (1864-65) efore the stoppage of work, which may be partly accounted for by the circumstance

that the major part of the earth-works had been completed, and that on masonry the same numbers could not be employed. Altogether it would not have been unreasonable to anticipate that the expenditure and consequent progress would have been half as great again as was actually the case.

2. *Estimates sanctioned.*—At the beginning of the year the Government had sanctioned estimates, amounting to Rupees 96,08,255.8.6; of which amount Rupees 604.8.3 were on revenue account, the remainder being for construction. These estimates provided for the construction of the main canal up to the end of the 10th section in the 186th mile, and also for the head works and anicut across the Toombudra at Soonkasala, the Somaisweram anicut across the Pennair at its entry into the Nellore District, for station buildings and a few distribution works. There were sanctioned in 1868-69 estimates for—

Estimates sanctioned during the year—

	RS.
Main supply	5,20,810
Distribution	20,643
Buildings	495
Telegraph line	5,324
	5,47,272

The amount under main supply provides for an anicut and head works on the Pennair at the head of the 10th section. A particular statement of these estimates is given in the Appendix. Below are shown the original estimates of the cost of the various works, and in juxta-position the estimates as they now stand. Those only in italics have been altered during the present year:—

Description of Work.	Original estimates.			Present estimates.			Increase.		
	RS.	A.	P.	RS.	A.	P	RS.	A.	P.
Kurnool anicut	3,03,080	0	0	3,03,080	0	0	......		
One mile of canal from anicut ...	65,000	0	0	65,000	0	0	......		
Soonkasala anicut and head works.	1,25,000	0	0	4,35,722	0	0	3,10,722	0	0
1st section, main canal, miles 18 ...	4,60,000	0	0	10,60,657	0	0	6,00,657	0	0
Hindry aqueduct	1,45,000	0	0	2,46,029	8	0	1,01,029	8	0
2nd section, main canal, miles 14 ...	5,34,000	0	0	18,00,150	0	0	12,66,150	0	0
3rd do., do., ,, 11 ...	1,88,500	0	0	9,58,000	0	0	7,69,500	0	0
4th do., do., ,, 17 ...	2,71,560	0	0	11,80,393	0	0	9,08,833	0	0
5th do., do., ,. 12 ...	2,50,003	5	4	7,29,965	0	3	4,79,961	10	11
6th do., do., ,, 19 ...	3,04,258	5	4	4,39,772	5	4	1,35,514	0	0
7th *do., do.,* ,, 23 ...	2,34,893	5	4	4,82,743	5	4	2,47,850	0	0
8th do., do., ,, 28 ...	4,37,410	0	0	7,36,830	0	0	2,99,420	0	0
9th do , do., ,, 35 ...	8,02,811	0	0	9,45,837	0	0	1,43,026	0	0
Adamapully anicut and head works cross the Pennair...	3,00,000	0	0	3,00,500	0	0	500	0	0
10th section, main canal, miles 8 ...	1,94,330	0	0	1,94,330	0	0	......		
Distribution works	52,800	0	0	81,830	0	0	29,030	0	0
Buildings	78,765	14	1	1,00,183	9	11	21,417	11	10
Somaisweram anicut	1,41,357	1	7	1,71,727	1	7	30,370	0	0
Line of Telegraph	44,116	0	0	49,440	0	0	5,324	0	0
Revenue account	604	8	3	604	8	3	......		
	49,33,489	7	11	102,82,794	6	8	53,49,304	14	9
Deduct retrenchment from main canal, 4th section ... RS. 1,24,872; Do. do. building do. ... 2,395	......			1,27,267	0	0	1,27,267	0	0
	49,33,489	7	11	101,55,527	6	8	52,22,037	14	9

Proceedings of the Madras Government, Public Works Department, 12*th August* 1869.

3. *Expenditure.*—The total expenditure on all accounts at the year's end was Rupees 115,71,676.14.6, as shown below:—

				RS.	A.	P.
Construction including special superintendence and sundries ...				82,20,579	13	9
Cost of the Permanent Establishment—						
Controlling	8,60,686	14	9			
Executive...	17,46,745	7	0			
				26,07,432	5	9
Miscellaneous expenses				1,96,624	1	6
Store charges unadjusted				1,03,389	2	3
General plant in use on works ...				1,05,923	11	4
Revenue account				12,023	7	2
Stores				3,25,704	4	9
				115,71,676	14	6

4. The following description gives the state of the works for the year :—

Soonkasala anicut and head works.—The north branch of the anicut, which had not before sustained any serious injury, breached in September. The cause of the damage was faulty original construction. The requisite repairs have been executed, and other defective parts of the work have been strengthened, but there can be no assurance that other defects do not remain latent, and therefore liable to occasion a repetition of the accident.

A massive coping has been added to the whole length of the weir. Expenditure of the year Rupees 24,525.11.7; total expenditure Rupees 4,61,357.0.3.

5. *First section, main canal, from the head to* 18*th mile.*—The embankments were breached in several places by land-floods which found their way into the canal in the second mile at an inlet which was almost entirely destroyed. In some places the breaches were certainly due to the banks not having been formed in the first instance with sufficient care. The repairs were carried out with creditable rapidity, and water was re-admitted at the head-sluice in a few days.

It was hoped that this section which, although it has carried water for several years, was, at the beginning of the season, incomplete as regards excavation, embankments, and revetments, would have been finished during the past year; but this has not been accomplished, and some hard rock has still to be removed from the bed of the canal. Expenditure during the year Rupees 75,096.2.1; total expenditure Rupees 10,14,967.0.6.

The Hindry aqueduct at the lower end of the 1st section had but little done to it. The sum spent during 1868-69 was Rupees 2,672.2.10, and the total expenditure has been Rupees 2,75,207.10.0. The parapets and formation of towing-path alone remains to be done.

6. *Second section, main canal,* 18*th to* 32*nd mile.*—The work stated last year to have been found necessary for the reformation of the embankments of this section, and for the stoppage of leakage, were carried out with much energy and with good effect. More work of the same kind remains to be done, but ultimately this section will, though at a great cost, be rendered efficient and secure. Amount expended Rupees 1,99,2[illegible]3.8.5 for the year, and Rupees 18,64,849.14.3 to the end of the year.

7. *Third section, main canal, 33rd to 43rd mile.*—Similar work for the security of the embankments was carried out to a considerable extent in this section also, and for the most part with good results. The expenditure amounted to Rs. 1,07,342.1.6 for the year, or altogether to Rupees 8,75,819.2.8.

8. *Fourth section, main canal, 44th to 60th mile.*—The works in this section had been nearly completed, and the water had been admitted throughout when, on the 31st August, after a heavy rain-fall, which raised the level of the water in a few hours $3\frac{3}{4}$ feet, two serious breaches occurred in the 57th and 58th mile. The canal there has a single bank, and where it crosses the valley, forms a tank of about two-and-a-half square miles in area; and it was here that the principal breach occurred. The breaches were closed and the water re-admitted and passed on during November.

Until all the upper sixty miles shall have been tested to eighteen inches or two feet above ordinary full canal level, and all defects made good, there will remain considerable risk of failure from flows in the banks, whether caused by imperfect construction or by the burrows of vermin.

It is anticipated that the whole of the works of this section will be completed for about $1\frac{1}{2}$ lacs less than the amount of the estimates last sanctioned, and the arrangements made by the Executive-Engineer in charge reflect much credit upon his management. The outlay of the year on this section was Rupees 83,327.0.3, and the total outlay Rupees 9,58,722.4.4.

9. *Fifth section, main canal, 61st to 72nd mile.*—The Teragopila aqueduct, the principal masonry work of the section, has been completed, and the works were sufficiently advanced in December to allow of water being passed through the Mittacondal cutting, which is at the water-shed, and thence the supply passed to the Caulee and Kundar and on to the Pennair, which discharges into the sea in the Nellore District. Amount spent Rupees 1,54,018.7.9 for the year, and Rupees 8,09,958.8.9 to the end of the year.

10. *Sixth section, main canal, 73rd to 91st mile.*—Water at the latter end of December was admitted to the three or four upper miles of this section. In the 78th mile the canal ceases to be carried on a contour, and begins to fall rapidly. The principal masonry works are the locks on which about 36,635 cubic yards of masonry remained to be done in September last, and it was expected, that on an average 3,000 cubic yards would be completed monthly. The whole section will be finished about May 1870. With the exception of the first six miles the canal in this section will be a still-water navigation. Expenditure of the year Rupees 1,66,611.1.0; total expenditure Rupees 5,10,074.7.1.

11. *Seventh section, main canal, 91st to 114th mile.*—The head works and masonry, generally, made considerable progress, and the earth-works were previously well advanced. It is expected that the whole section will be finished and ready to receive water during the irrigating season of 1869. The value of the work done was Rupees 1,79,165.7.10; total expenditure to end of 1868-69 Rs. 4,18,921.12.2.

12. *Eighth section, main canal, 115th to 143rd mile.*—The masonry, which is the principal work remaining to be done, and probably the whole section, will not be finished much before the 1st July 1870. The arrangements of this section

were carefully gone into and revised where necessary last September, with a view to determine, with reference to the area of land and water available, what the capacity of the canal in the several reaches between the locks should be.

Work was done during the year of the value of Rupees 64,177.12.6, and the total outlay has been Rupees 3,34,918.15.11.

13. *Ninth section, main canal, 144th to 178th mile.*—In the earlier part of the year the progress was not as good as it should have been, but during the latter six months the works have been pushed forward, and it is hoped that water will be sent down as far as the 169th mile in June or July next, from the anicut across the Kundar at the head of the section. Expenditure of the year Rupees 1,50,628.13.11; total expenditure Rupees 2,45,884.2.3.

14. *Adimapully anicut.*—This weir across the Pennair at the head of the 10th section will be about 2,376 feet in length. It will, for about one-third of this length, be simply a wall built on rock (lime-stone), the rest being on deep sand or clay with the usual arrangements for a sloping apron. Work in the bed of the river was not commenced until January, but at that time the tramways and other preliminary works were in a forward state. Expenditure in and up to the end of the year Rupees 1,10,439.6.0.

15. *Tenth section, main canal, 172th to 197th mile.*—This is the last section under the present contract: it terminates near the Military Cantonment of Cuddapah. The works will all be completed sometime before the anicut, from which the supply will be obtained, will be ready. Expenditure of the year Rupees 33,268.0.3, and up to the end of the year Rupees 35,624.11.4.

16. *Distribution works.*—The progress of these continues to be very far from satisfactory. Surveys are reported to be ready for some of the channels, but as yet very little has been done in actual construction, and no estimates for channels below the 53rd mile of the main canal have been submitted.

17. *Bellary Division investigations.*—Some surveys for a low level line of canal for the Upper Bellary project from the Toombudra have been made, and it is reported that less difficulties have been found than were met with on the high level line. Only a preliminary report has as yet been received.

18. *Reservoir investigations.*—These are still being gone on with. The Masoor plans are understood to be now before the Board of Directors, and the Toonga surveys are well advanced. If the Board contemplate taking up these works, it is probable that some communication will be made to the Secretary of State ere long.

19. *Telegraph.*—The Company's line from the head works at Soonkasala to the Chief Engineer's office at Kurnool, was completed during the year, and the line below Kurnool is being gone on with, and should be open throughout to Cuddapah in July next.

20. *Road crossings.*—A great many bridges have been constructed, and the crossings required have all been settled. There are three classes of crossings,

The first and second accommodate all descriptions of traffic, and the third is intended for foot-passengers and cattle. The number of each are—

	Over bridges.	Under bridges and culverts.
First class, ...	11	1
Second do., ...	38	17
Third do., ...	8	14

Total length of canal 186 miles.

21. *Average labour employed on the canal works.*—The average labour employed on the Company's canal works during the year, and also for the four preceding years was as follows :—

	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.
Coolies, ...	16,707	6083·13	670·75	6473·55	9968·68
Artificers, ...	1,231	495·08	28·72	189·98	610·95
Carts, ...	750	293·62	12·	178·08	382·19
Cattle, ...	1,966	675·40	31·75	438·19	690·52

22. *Revenue accounts.*—The way in which the revenue accounts are to be kept is still undecided. The returns received from the Collector of Kurnool show that up to 31st March 1869, the total collections on account of irrigation amounted to Rupees 30,451.10.4, and those of the year to Rupees 10,184.0.2 ; the particulars of cultivation for the years 1867-68 and 1868-69 are subjoined :—

Description of irrigation or supply.	Area.		Water-rate.	Full demand.			Remissions.			Net adjusted balance of demand for supplies actually received.			Remarks.
	Acres.	Decimals.		RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
Collection of 1867-68.													
First crop, ...	1,042	38	6	6,254	4	9	17	1	7	6,237	3	2	As per revised return, dated 11th May 1869, from the Collector.
Do.	66	60	12	799	4	10	222	10	5	576	10	5	
Second crop, ...	14	68	6	88	1	4	......			88	1	4	
Do.	11	75	12	141	0	0	......			141	0	0	
Sugar-cane, ...	3	45	12	41	6	4	......			41	6	4	
Town supply, ...	...	...	...	3,000	0	0	......			3,000	0	0	
Total, ...	1,138	86	...	10,324	1	3	239	12	0	10,084	5	3	
Collection of 1868-69.													
First crop, ...	921	94	6	5,531	10	9	159	14	1	5,371	12	8	
Do.	...	85	1	0	13	8	......			0	13	8	
Do.	131	83	12	1,581	15	3	1,022	11	5	559	3	10	
Second crop, ...	3	35	6	20	1	4	1	8	0	18	9	4	
Do.	2	23	12	26	12	2	17	13	5	8	14	9	
Sugar-cane, ...	4	50	6	27	0	0	......			27	0	0	
Occasional,... ...	14	13	1	14	2	3	......			14	2	3	
Town supply, ..	...	...	...	4,000	0	0	......			4,000	0	0	
Lands cultivated out of those made over to the Company,	957	21	...	966	0	0	......			966	0	0	
Total, ...	2,036	04	...	12,168	7	5	1,201	14	11	10,966	8	6	

23. *Draft by the Agent.*—Up to the end of the previous year the amount drawn from the Government treasuries in India by the Company's Agent was Rupees 90,61,968.3.0, of which Rupees 1,00,000 were returned to the Bank of Madras in 1868-69, and during this year no money was drawn in India. £293,004 were raised on loan in England, and Rupees 26,30,443.12.8 of this amount were remitted to the Agent in India.

24. *Expenditure.*—During the year Rupees 15,58,470.10.3 were expended in India, and the cash balance at the year's end was Rupees 4,39,945.12.6. The total expenditure in India from the commencement was Rupees 115,71,676.14.6.

25. *Audit.*—The following is the summary of the state of audit of the expenditure incurred by the Compa... :—

	RS.	A.	P.	RS.	A.	P.
Amount drawn from Government up to 31st March 1868 ...	90,61,968	3	8			
Deduct amount returned to the Bank of Madras ...	1,00,000	0	0	89,61,968	3	8
Amount remitted to the Agent by the Board up to 31st March 1868 ...				985,790	6	8
Do. do. during 1868-69 ...				16,44,653	5	4
Bank interest and deposits in India up to 31st March 1869 ...				1,107	14	9
Value of stores supplied by the Board of Directors up to 31st March 1869 ...				3,81,119	3	9
Amount under deposit on account of undischarged securities, &c., up to 31st March 1869 ...				33,483	8	10
Bills drawn on the Board of Directors ...				3,500	0	0
Agent's liabilities ...				120,11,622	11	0
Expenditure debited to permanent heads of charge in the accounts up to 31st March 1868 and passed by Government ...				90,51,705	6	11
Do. do. in the accounts from 1st April to 30th September 1868 and passed by Government ...				8,28,772	6	8½
Do. do. in the accounts from 1st October to 31st December 1868, ready for submission to Government ...				4,72,059	8	7
Do. do. in the accounts from 1st January to 31st March 1869, just received for the audit of this office ...				4,75,474	13	3½
Do. do. under floating heads in the accounts up to 31st March 1869, but not yet debited to appropriate permanent heads of charge ...				1,84,769	10	11
Do. on general plant in use on works ...				1,05,923	11	4
Do. retrenched ...				1,27,267	0	0
Amount remaining to be accounted for by the Agent ...				7,65,650	1	3
				120,11,622	11	0

26. *Extent of land made over to the Company from April* 1868 *to March* 1869.—The extent of land made over to the Company's Chief Engineer by the Revenue authorities during the year was—

Under Class A, acres 700·28
Do. do. B, do. 240·38
Do. do. C, do. 50·96
Do. do. D, do. ·51

and the total amount transferred with the amount of compensation paid are :—

Class A, acres	11,999·94			
Do. B, do.	3,354·19			
Do. C, do.	85·06			
Do. D, do.	46·44			
Total acres ...	* 15,485·63			
Compensation, Rs.		73,867	0	9
Deduct for trees, &c., ,,		2,956	11	5
Net amount paid ,,		70,610	5	4

* Of this 263·21 acres were re-transferred to Government.

for 6,180·79 acres, while for the rest of the land taken up, other lands were granted in exchange.

27. The Board of Directors have not as yet furnished this office with any account of receipts and expenditure from guaranteed capital, and these particulars for theloan capital have been received only for the first-quarter of the year under notice. Under these circumstances the way in which the sum, Rs. 6,85,248†, not included in the Indian Accounts, or shown in the accounts received from the Board, has been disposed of cannot be stated.

	RS.
† Capital	... 4,02,323
Loan...	... 2,82,925
Total	... 6,85,248

No. 257. ORDER THEREON, 12th August 1869, No. 2,650.

IRRIGATION, No. 16.

ORDERED that these papers be forwarded to the Government of India.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

No. 258. DOCKET, No. 2,651, dated 12th August 1869.

COPY of the above forwarded to the Government of India, with reference to their letter, dated 11th June 1869, No. 163-I.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

Exd. F. R. Bantleman.

No. 25.

Administration Report.

Madras Irrigation & Canal Company.

1. The progress made during the year was much greater than that in 1867-68 — It has not however been as considerable as might have been expected — The number of laborers employed has been very
1864-65. much below that of the year before the stoppage of work, which may be partly accounted for by the circumstance that the major part of the earth-works had been completed, and that on Masonry the same numbers could not be employed — Altogether it would not have been unreasonable to anticipate that the expenditure, and consequent progress, would have been half as great again as was actually the case. —

Estimates sanctioned 2. At the beginning of the year the Government had sanctioned estimates amounting to Rupees 96,08,255-8-6 (of which amount Rupees 604-8-3 were on Revenue account the remainder being for Construction) These estimates provided for the construction of the Main Canal up to the end of the 10th Section in the 186th mile, and also for the head works and Anicut across the Toombudra at Soonkásala, the Somaisweram Anicut across the

Pennair

Pennair at its entry into the Nellore District, for Station buildings and a few distribution works – There were sanctioned in 1868–69 estimates for

Main supply	Rs: 5,20,810	Estimates sanctioned during the year.
Distribution	20643	
Buildings	495	
Telegraph line	5324	
	547,272	

The amount under Main supply provides for an Anicut and head works on the Pennair at the head of the 10th Section – A particular statement of these estimates is given in the Appendix – Below are shewn the orignal estimates of the cost of the various works, and in juxta position the estimates as they now stand – Those only in italics have been altered during the present year. –

Description of work.	Original estimates			Present Estimates			Increase		
Kurnool Anicut	303080	..	..	303080	..	..	..	..	..
1 mile of Canal from Anicut	65000	..	..	65000	..	..	..	..	..
Soonkasala Anicut and head works	125000	..	..	435722	..	..	310722	..	..
1st Section Main Canal, miles 18	460000	..	..	1060657	..	..	600657	..	..
Hindry Aqueduct	145000	..	..	246029	8	..	101029	8	..
2nd Section Main Canal miles 14	534000	..	..	1800150	..	..	1266150	..	..
3rd do do 11	188500	..	..	958000	..	..	769500	..	..
4th do do 17	271560	..	..	1180393	..	..	908833	..	..
5th do do 12	250003	5	4	729965	..	3	479961	10	11
6th do do 19	304258	5	4	439772	5	4	135514	..	..
7th do do 23	234893	5	4	482743	5	4	247850	..	..
8th do do 28	437410	..	..	736830	..	..	299420	..	..
9th do do 35	802811	..	..	945837	..	..	143026	..	..
Adimapully Anicut & head works across the Pennair	300000	..	..	300500	..	..	500	..	..
10th Section Main Canal miles 8	194330	..	..	194330	..	..	..	..	..
Distribution works	52800	..	..	81830	..	..	29030	..	..
Buildings	78765	14	1	100183	9	11	21417	11	10
Somaiswaram Anicut	141357	1	7	171727	1	7	30370	..	..
Line of Telegraph	44116	..	..	49440	..	..	5324	..	..
Revenue account	604	8	3	604	8	3	..	..	..
	4933489	7	11	10282794	6	8	5349304	14	9
Deduct retrenchment from Main Canal 4th Section – 124872 – .. –									
Do Do Buildings – do – 2395 – .. –	..	..	..	127267	..	..	127267	..	..
	4933489	7	11	10155527	6	8	5222037	14	9

Expenditure. 3. The total expenditure on all accounts at the year's end was Rupees 1157,676-14-6 as shewn below.

		Rs. a. p.
Construction including special superintendence and sundries		822,0579-13-9
Cost of the Permanent Establishment.		
Controlling	Rs: 860,686-14-9	
Executive	1746745-7-	2607,432-5-9
Miscellaneous expenses		196,624-1-6
Store charges unadjusted		103,389-2-3
General Plant in use on works		105,923-11-4
Revenue account		12,023-7-2
Stores		325,704-4-9
		1157,1676-14-6

4. The following description gives the state of the works for the year.-

Soonkasala Anicut and headworks.- The North branch of the Anicut which had not before sustained any serious injury breached in September - The cause of the damage was faulty original construction - The requisite repairs have been executed, and other defective parts of the work have been strengthened, but there can be no assurance that other defects do not remain latent, and therefore liable to occasion a repitition of the accident.

A massive coping has been added to the whole length of the weir - Expenditure of the year Rupees 24,525-11-7 Total expenditure Rupees 4,61,357-"-3.-

1st Section Main Canal from the head to 18 miles. 5. The embankments were breached in several places by land floods which found their way into the Canal in the 2nd mile at an inlet which was almost entirely destroyed - In some places the breach were certainly due to the banks not having been formed

formed in the first instance with sufficient care.— The repairs were carried out with creditable rapidity and water was readmitted at the head sluice in a few days.—

It was hoped that this section which, although it has carried water for several years, was at the beginning of the season incomplete as regards excavation, embankments and revetments, would have been finished during the past year, but this has not been accomplished, and some hard rock has still to be removed from the bed of the Canal— Expenditure during the year Rupees 75,096-2-1 Total expenditure Rupees 10,14,967-..-6.—

The Hindry Aqueduct at the lower end of the first Section had but little done to it— The sum spent during 1868-69 was Rupees 2,672-2-10, and the total expenditure has been Rupees 2,75,207-10-" The parapets and formation of towing path alone remains to be done.—

6. The work stated last year to have been found necessary for the reformation of the embankments of this Section, and for the stoppage of leakage, were carried out with much energy and with good effect— More work of the same kind remains to be done, but ultimately this Section will, though at a great cost, be rendered efficient and secure.— Amount expended Rupees 1,99,223-8-5 for the year, and Rupees 18,64,849-14-3 to the end of the year.— 2nd Section Main Canal 18th to 32nd miles.

7. Similar work for the security of the embankments 3rd Section Main Canal 33rd to 43rd miles

was carried out to a considerable extent in this Section also, and for the most part with good results. The expenditure amounted to Rupees 107,342-1-6 for the year, or altogether to Rupees 875,819-2-8.

4th Section Main Canal 44th to 60th miles. 8. The works in this Section had been nearly completed, and the water had been admitted throughout when on the 31st August, after a heavy rainfall, which raised the level of the water in a few hours 3¾', two serious breaches occurred in the 57th and 58th miles. The Canal there has a single bank, and where it crosses the valley forms a tank of about 2½ square miles in area, and it was here that the principal breach occurred. The breaches were closed and the water readmitted and passed on during November.

Until all the upper 60 miles shall have been tested to 18 inches or 2 feet above ordinary full canal level and all defects made good, there will remain considerable risk of failure from flaws in the banks, whether caused by imperfect construction or by the burrows of vermin.

It is anticipated that the whole of the works of this Section will be completed for about 1½ lacs less than the amount of the estimates last sanctioned, and the arrangements made by the Executive Engineer in charge reflect much credit upon his management. The outlay of the year on this Section was Rupees 83,327-..-3, and the total outlay Rupees 958,722-4-4.

9. The

9. The Ieragopila Aqueduct, the principal masonry work of the Section, has been completed, and the works were sufficiently advanced in December to allow of water being passed through the Mittacondal cutting, which is at the watershed, and thence the supply passed to the Coulee and Kundar and on to the Pennair, which discharges into the sea in the Nellore District. Amount spent, Rupees 154,018-7-9 for the year and Rupees 809,958-8-9 to the end of the year. 5th Section Main Canal 61st to 72nd miles.

10. Water at the latter end of December was admitted to the 3 or 4 upper miles of this Section. In the 78th mile the Canal ceases to be carried on a contour, and begins to fall rapidly. The principal masonry works are the locks on which about 36,635 cubic yards of masonry remained to be done in September last and it was expected that, on an average 3,000 cubic yards would be completed monthly. The whole Section will be finished about May 1870. With the exception of the first 6 miles the Canal in this Section will be a still water navigation. Expenditure of the year Rupees 166,611-1-0 Total expenditure Rupees 510,074-7-1. 6th Section Main Canal 73rd to 91st miles.

11. The head works and masonry generally made considerable progress and the earthworks were previously well advanced. It is expected that the whole Section will be finished and ready to receive water during the irrigating season of 1869. The value of the work done was Rupees 179,165-7-10 Total expenditure 7th Section Main Canal 91st to 114th miles.

to end of 1868/69 Rupees 4,18,921-12-2.— 15

[S]ection Main Canal 115th to 143rd miles. 12. The masonry, which is the principal work remaining to be done, and probably the whole Section, will not be finished much before the 1st July 1870.— The arrangements of this Section were carefully gone into and revised where necessary last September, with a view to determine, with reference to the area of land and water available, what the capacity of the Canal in the several reaches between the locks should be.—

Work was done during the year of the value of Rupees 64,177-12-6, and the total outlay has been Rupees 3,34,918-15-11.—

[..]th Section Main Canal 144th to 178th miles. 13. In the earlier part of the year the progress was not as good as it should have been, but during the latter 6 months the works have been pushed forward, and it is hoped that water will be sent down as far as the 169th mile in June or July next, from the Anicut across the Kundar at the head of the Section— Expenditure of the year Rupees 1,50,628-13-11. Total expenditure Rupees 2,45,884-2-3.—

[..]imapully Anicut. 14. This weir across the Pennair at the head of the 10th Section will be about 2376 feet in length. It will, for about 1/3rd of this length, be simply a wall built on rock (limestone), the rest being on deep sand or clay with the usual arrangements for a sloping apron— Work in the bed of the river was not commenced until January, but at that time the tramways and other preliminary works were in a forward state.— Expenditure in and up to the end of the year Rupees 1,10,439-6-".—

15. This

15. This is the last Section under the present Contract. It terminates near the Military Can=tonment of Cuddapah. The works will all be completed sometime before the Anicut, from which the supply will be obtained, will be ready — Expenditure of the year Rupees 33,268-–3 and up to the end of the year Rupees 35,624-11-4.— 10th Section Main Canal 179th to 187th miles.

16. The progress of these continues to be very far from satisfactory — Surveys are re=ported to be ready for some of the channels, but as yet very little has been done in actual construction and no estimates for channels below the 53rd mile of the Main Canal have been sub=mitted.— Distribution works.

17. Some Surveys for a low level line of Canal for the Upper Bellary project from the Toombudra have been made, and it is reported that less difficulties have been found than were met with on the high level line — Only a prelim=inary report has as yet been received.— Bellary Division investigations.

18. These are still being gone on with. The Mysore plans are understood to be now before the Board of Directors, and the Toonga surveys are well advanced — If the Board contemplate taking up these works, it is probable that some communication will be made to the Secretary of Reservoir investigations.

State

State are long.—

Telegraph. 19. The Company's line, from the head works at Soonkásala to the Chief Engineer's office at Kurnool, was completed during the year, and the line below Kurnool is being gone on with, and should be open throughout to Cuddapah in July next.—

Road Crossings. 20. A great many bridges have been construc=ted and the crossings required have all been settled— There are 3 classes of crossings. The 1st and 2nd accommodate all descriptions of traffic, and the 3rd is intended for foot passengers and cattle.— The numbers of each are.

	Over bridges	Under bridges & Culverts
1st Class	11	1
2nd do	38	17
3rd do	8	14

Total length of Canal 186 miles.—

Average labor employed on the Canal works. 21. The average labor employed on the Company's Canal works during the year, and also for the 4 preceding years was as follows

	1864/65.	1865/66.	1866/67.	1867/68.	1868/69.
Coolies	16,707	6083.13	670.75	6473.55	9968.68
Artificers	1,231	493.08	28.72	189.98	610.95
Carts	750	293.62	12.	178.08	382.19
Cattle	1,966	675.40	31.75	438.19	690.52

Revenue accounts. 22. The way in which the Revenue accounts are to be kept is still undecided.— The returns received from the

the Collector of Kurnool shew that, up to 31st March 1869, the total collections on account of irrigation amounted to Rupees 30,451-10-4, and those of the year to Rupees 10,184-"-2; the particulars of cultivation for the years 1867-68 and 1868-69 are subjoined.

Description of irrigation or supply.	Area: Acres.	Area: Decimals.	Water rate.	Full demand.			Remissions.			Net adjusted balance of demand for supplies actually received.			Remarks.
Collection of 1867-68.													As per revised return dated 11th May /69 from the Collector.
1st Crop	1042	38	6	6254	4	9	17	1	7	6,237	3	2	
Do	66	60	12	799	4	10	222	10	5	576	10	5	
2nd crop	14	68	6	88	1	4	"	"	"	88	1	4	
Do	11	75	12	141	"	"	"	"	"	141	"	"	
Sugarcane	3	45	12	41	6	4	"	"	"	41	6	4	
Town supply	"	"	"	3,000	"	"	"	"	"	3,000	"	"	
Total	1138	86	"	10,324	1	3	239	12	"	10,084	5	3	
Collection of 1868-69.													
1st crop	921	94	6	5531	10	9	159	14	1	5,371	12	8	
Do	"	85	1	"	13	8	"	"	"	"	13	8	
Do	131	83	12	1581	15	3	1022	11	5	559	3	10	
2nd crop	3	35	6	20	1	4	1	8	"	18	9	4	
Do	2	23	12	26	12	2	17	13	5	8	14	9	
Sugarcane	4	50	6	27	"	"	"	"	"	27	"	"	
Occasional	14	13	1	14	2	3	"	"	"	14	2	3	
Town supply	"	"	"	4000	"	"	"	"	"	4,000	"	"	
Lands cultivated out of those made over to the Company	957	21	"	966	"	"	"	"	"	966	"	"	
Total	2036	04	"	12168	7	5	1201	14	11	10966	8	6	

23. Up to the end of the previous year the amount drawn from the Government Treasuries in India by the Company's Agent was Rupees 90,61,968-3-", of which

Draft by the Agent

which Rupees 100,000 were returned to the Bank of Madras in 1868-69, and during this year no money was drawn in India – £293,000 were raised on loan in England, and Rupees 26,30,443-12-8 of this amount were remitted to the Agent in India.–

Expenditure. 24. During the year Rupees 15,58,470-10-3 were expended in India, and the Cash balance at the year's end was Rupees 4,39,945-12-6.– The total expenditure in India from the commencement was Rupees 1157,676-14-6.–

Audit. 25. The following is the summary of the state of audit of the expenditure incurred by the Company.

Amount drawn from Government up to 31st March 1868.	9061968.3.8	
Deduct amount returned to the Bank of Madras	100,000.–.–	8961968.3.8
Amount remitted to the Agent by the Board up to 31st March 1868		985790.6.8
Do. Do. during 1868-69		1644,653.5.4
Bank interest and Deposits in India up to 31st March 1869		1107.14.9
Value of Stores supplied by the Board of Directors up to 31st March 1869		381119.3.9
Amount under Deposit on account of undischarged securities &c. up to 31st March 1869		33,483.8.10
Bills drawn on the Board of Directors		3,500.–.–
Agent's liabilities		12011622.11.–

Expenditure

Expenditure debited to permanent heads of charge in the accounts up to 31st March 1868 and passed by Government	9051705. 6. 11
Do — Do in the accounts from 1st April to 30th September 1868 and passed by Government	828772. 6. 8½
Do — Do in the accounts from 1st October to 31st December 1868 ready for submission to Government	472059. 8. 7
Do — Do in the accounts from 1st January to 31st March 1869 just received for the audit of this office	475474. 13. 3½
Do — Do under floating heads in the accounts up to 31st March 1869 but not yet debited to appropriate permanent heads of charge	184769. 10. 11
Do — on General Plant in use on works	105923. 11. 4
Do — retrenched	127267. " "
Amount remaining to be accounted for by the Agent	765650. 1. 3
	12011622. 11. "

26\. The extent of land made over to the Company's Chief Engineer by the Revenue authorities during the year was: — *Extent of land made over to the Company from April 1868 to March 1869.*

Under Class A acres	700. 28
— B —	240. 38
— C —	50. 96
— D —	. 51

and the total amount transferred with the amount of compensation paid are: —

Class A acres	11999. 94
— B —	3354. 19
— C —	85. 06
— D —	46. 44
Total acres	*15485. 63
Compensation Rs:	73867. " 9
Deduct for trees &c	2956. 11. 5
Net amount paid	70910. 5. 4

* Of this 263.21 acres were retransferred to Govt. —

for

for 6180.79 acres, while for the rest of the land taken up, other lands were granted in exchange. 21

27. The Board of Directors have not as yet furnished this office with any account of receipts and expenditure from Guaranteed Capital, and these particulars for the Loan Capital have been received only for the first quarter of the year under notice. Under these circumstances the way in which the sum, Rupees 6,85,248, not included in the Indian accounts, or shewn in the accounts received from the Board, has been disposed of cannot be stated.

Capital	4,02,323
Loan	2,82,925
	6,85,248

Consulting Engrs Office
Irrigation & C. Company
Madras, 25th May 1869.

(Signed) J. Mullins, Major R.E.
Cons. Engr for I. & C. Company

(True copy)

J. Mullins Major R.E.
Cons. Engr for I. & C. Company

Ed. Mort.

P. J. 3052/69.

Consulting Engineer's Office
Irrigation & Canal Company 2321
Madras, 17th July 1869.

No. 47.

From,
Major J. Mullins, R.E.
Cons. Engr. for I. & C. Co.

To,
The Secretary to Government
Department of Pub. Works.

Sir,

I have the honor, with reference to the order of Government, No. 2121 of the 30th ultimo, to forward a copy of my Administration report for the past year, which contains the fullest available information regarding the Madras Irrigation and Canal Company's works.—

I have not received any accounts of expenditure to a later date than the 31st March last. The introduction of the new system of audit appears to have occasioned some delay, and the Examiner informs me that the accounts for April are not yet journalized, but that the Company's officers have promised to take up the accounts for April and May immediately.—

2. The Main Canal works, since the 31st March,

have been making good progress, but the distribution works, without which any considerable extension of cultivation is impracticable, are still very much behind hand - estimates for distribution to the first sub division of the 4th Section Main Canal were sanctioned in September 1868, and these works, which are intended to water 14,807 acres, are in progress - Distribution estimates, amounting to Rupees 11,150, for the supply of 9,837 acres under the 3rd Section have just been submitted for sanction. - Distribution channels under the first 72 miles of the Canal ought by this time to have been in a very advanced state even if not fully developed, but instead of this there has been, as yet, hardly a commencement made, and, as the ryots will certainly not apply for water until they feel assured of getting it, and of the stability of the supply, I do not anticipate that there will be more than a nominal increase of wet cultivation during 1869/70. -

Rs: 28,929

+ miles 44 to 60
G.O. No. 2882

miles 32 to 43
letter No. 41 dated 10th instant

3 Under the arrangements sanctioned by the Government on the recommendation of the Revenue Board, the extension of irrigation will, when the minor channels shall have been carried out, depend almost entirely upon the exertions of the Revenue officers of the Government, and I think that, unless

the Government are prepared to depute a spe-
=cial officer to superintend the development of
irrigation, the exclusion of the Canal officers
from the duty of ascertaining the wants and wishes
of the ryots and providing for them will result in
a very considerable postponement of the Revenue
returns, which the Government and the Company
both desire to obtain, and which the present for-
=ward state of the Main Canal should enable to
be realized very shortly. Even a special Revenue
officer, unless associated with the Canal officers,
and working heartily with them, will be able only
to make the ryots willing to take water by remov-
=ing prejudices which may interfere with the in-
=troduction of such a radical change as the con-
=version of dry lands into wet. The regulation
of the supply must be in the hands of the Canal
officers, and I do not see how, without free com-
=munication between them and the ryots who are
to get the supply, any system can work satisfac-
=torily.

I have the honor to be,
Sir,
Your most obedient servant,
[illegible] Major R.E.
Cons. Engr. for I.C. Company

Endts:

P.W. 1869 Dept.

Pro: Govt. for Ancit.

No. 3852

From
The Consulr. for M.C. Co:
To
The Secretary to Govt. D.P.W.

(4)

Dated 17
Despd. 21st } July/69.
Recd. 22

Enc: 1

Forward: copy of his Ad-
-ministration Report for the
past year in reference to the
order of Govt. No. 2121–30 ult
which contains the fullest
available information regard-
-ing the works of the M.C.C. Co:

No. 2650 & 2651 – 12: Augt./69.

No. 256

a. 26 July 1869 R. 29

Cir. Orient Enclosure

Irrigation

P. W. Dept.

No. 2650

3052

Proceedings of the Madras Government

Under date the 12 ~~July~~ Augt. 1869

Read the following

From the Cont. & Engineer
I. & C. Co. (Here enter No. 475 [illegible] July 1869)

Ordered that these
papers be forwarded
to the Government of
India

To the C. Engr. for his Inf. [illegible]
Despd. 13/8/69.

Docket No. 2651 dated 12th ~~July~~ Augt. 1869

Copy of the above
forwarded to the Govern-
-ment of India with
reference to their letter
dated 11th June 1869 No. 163

55

Ninety five Copies of Docket No. 2651
Fifty despd. to the Govt. of India 13/8/69.

Proceedings of the Madras Government. P.W. Deptt.

No. 250

the 12 July 1869.

Read the following

From the Chief Engineer P.W.D. No. [illegible] dated 12th July 1869.

Ordered that these papers be forwarded to the Government of India.

Do. P.W. No. 265 dated 12th July 1869

Copy of the above forwarded to the Government of India with reference to their letter dated 11th June 1869 No. 1081

[illegible]

C. 26 July 1869 No. 29

Cue 3052

Govt. of {1869} Madras.

PUBLIC WORKS.

To The Consulting Engr. for Madras Irrigation and Canal Company

Dated

Recd. Encd.

G. O. 12 Augt 1869, No. 2650 & 2651

Nos. 256-257 & 258

Administration Report (M. I. & C. Co.)

Passing orders on the letter from the Cons. Engr. submitting with remarks a copy of his Administration Report for 1868-69

Administration Report (M. I. & C. Co.)

A copy of the Pro. on the Administration of the Cons. Engr. for 1868-69, forwarded to the Govt. of India